

Amendments to the Drawings

The attached sheet of drawings includes amendments to Fig. 1A, 1B, and 1C by designating legends -- Prior Art--. Reference numeral 112-2 is further corrected to 110-2. This sheet, which includes Fig. 1A, 1B, and 1C, replaces sheet 1 as originally filed in its entirety.

REMARKS

Claims 1 – 14 are presented for reconsideration and further examination in view of the following remarks. Claims 15 – 17 are newly added, and presented here for a first examination on the merits.

In the outstanding Office Action, the Examiner: objected to the drawings; objected to the specification; rejected claims 1 and 6 – 14 under 35 U.S.C. 112, second paragraph, as being indefinite; rejected claims 1, 3 – 6, 8 – 11, 13, and 14 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,862,088 to Song et al. (subsequently referred to as “Song”) and further in view of U.S. Patent Application Publication No. 2002/0172111 to Tsai et al. (subsequently referred to as “Tsai”); rejected claim 2 under 35 U.S.C. 103(a) as being unpatentable over Song and Tsai as applied to Claim 1, and further in view of U.S. Patent Application Publication No. 2006/0250913 to Kim (subsequently referred to as “Kim”); and, rejected claims 7 and 12 under 35 U.S.C. 103(a) as being unpatentable over Song and Tsai and further in view of U.S. Patent Application Publication No. 2003/0091350 to Lai et al. (subsequently referred to as “Lai”).

By this Response, Applicant traverses the Examiner’s rejections.

Objections to the Specification

In response to the Examiner’s objections to the specification, an amended title is submitted to replace the original title, as required by the Examiner, and the abstract has been amended to be within the range of 50 to 150 words.

It is submitted that these amendments obviate the Examiner’s objections.

Objections to the Drawings

In response to the Examiner’s objections to the drawings, the label “prior art” has been added to

Figures 1A, 1B, and 1C as required by the Examiner, and reference numeral 112-2 is further corrected to 110-2.

It is submitted that these amendments obviate the Examiner's objections.

Rejections under 35 U.S.C. §112, second paragraph

In the outstanding Office Action, the Examiner rejected claims 1 and 6 – 14 under 35 U.S.C. 112, second paragraph, as being indefinite;

Regarding Claims 1 and 10, the claims now recite --a signal-- instead of “the signal.”

Regarding Claims 6, 8, 11, and 13, the term “usual detection level” has been changed to --ADefect detection level-- as described in the originally filed specification.

Regarding Claims 6, 9, and 14, Claims 6 and 9 are now dependent on Claim 4, and Claim 14 now recites --an envelope signal of an RF signal--. Therefore, these claims possess sufficient antecedent basis.

Regarding Claims 7 and 12, the claims now recite --data length ...of EFM signals-- instead of “RF pattern.” In addition, the term “serious data length” is now changed to --third predetermined data length-- . Further the relationship of the variables n1, n2, n3, and n4 has now been added, and the specification has been amended to clarify that the variables n1, n2, n3 and n4 are indeed “any integer including zero” as proposed by the Examiner.

Regarding Claims 8 and 13, the limitation “a third threshold level” is now changed to --an ADefect detection level--. In addition, the term “usual detection level” has been changed to --ADefect detection level--.

Regarding Claims 9 and 14, the limitation “a fourth threshold level” is now changed to --an interruption detection level--. In addition, the clauses containing the term “normal” are deleted.

Regarding Claim 10, the term “abnormal data length” is now changed to --predetermined data

length--.

Rejections under 35 U.S.C. §103(a)

In the outstanding Office Action, the Examiner rejected claims 1, 3 – 6, 8 – 11, 13, and 14 under 35 U.S.C. 103(a) as being unpatentable over Song in view of Tsai; rejected claim 2 under 35 U.S.C. 103(a) as being unpatentable over Song and Tsai in view of Kim; and, rejected claims 7 and 12 under 35 U.S.C. 103(a) as being unpatentable over Song and Tsai and further in view of Lai.

Response

Reconsideration and withdrawal of the rejections are respectfully requested.

To establish a *prima facie* case of obviousness, the Examiner must establish: (1) some suggestion or motivation to modify the references exists; (2) a reasonable expectation of success; and (3) the prior art references teach or suggest all of the claim limitations. *Amgen, Inc. v. Chugai Pharm. Co.*, 18 USPQ2d 1016, 1023 (Fed. Cir. 1991); *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988); *In re Wilson*, 165 USPQ 494, 496 (CCPA 1970).

Applicant submits that all of the features of the presently claimed invention are not disclosed, taught or suggested in the cited prior art.

Claims 1, 8, and 13 have been amended to clearly recite RPDefect means/steps and DSPDefect means/steps.

Song discloses a Method and Apparatus for Providing Adaptive Control of a Track Servo, in which reflected beam is compared to three reference levels (Fig. 2) in order to detect defects.

Tsai discloses a Circuit for Protecting Synchronizing Patterns, in order to recover the frame SYNC signal by using an EFM signal when a disc is defective.

Lai discloses a Method for Protecting Phase Lock Loop in Optical System, in which waveform length of EFM signals are determined to protect the PLL.

Applicants respectfully traverse the rejection on the basis that all citations are silent about and do not disclose the claimed RPDefect means/step and the claimed DSPDefect means/step as set forth in Claims 1, 8, 13, and also in new claims 15-17.

The claimed invention utilizes ADefect1 detection means/step, EFMDefect detection means/step, Interruption detection means, ADefect detection means, RPDefect detection means/step, and DSPDefect detection means/step to comprehensively detect diversity of defects on a disc. Each of the claimed means/step has its own merit so that different kinds of defect detection would not be missed.

While the cited references disclose some detection schemes similar to some of the claimed detection means/steps, the cited prior art references, taken alone or in combination, fail to disclose at least two of the claimed means/steps—the RPDefect detection means/step and the DSPDefect detection means/step.

As set forth in the specification, in the claimed RPDefect detection means/step, an RFRP signal is compared to an RPDefect threshold level, wherein the RFRP signal is a peak envelope, a bottom envelope, or a peak-to-bottom envelope of the RF signal. Accordingly, a flag signal is set when the RFRP signal is lower than the RPDefect threshold level.

Also as set forth in the specification, in the claimed DSPDefect detection means/step, an absolute difference of the RF signal and a frequency-domain filtered RF signal is determined, and then is compared to a DSPDefect threshold level. Accordingly, a DSPDefect flag signal is set when the absolute difference is greater than the DSPDefect threshold level.

Neither of these features are found anywhere in the cited prior art patents and publications.

Further, Applicants submit that RPDefect means/step and the claimed DSPDefect means/step are

not similar to, and thus not obvious over, other defect detection means/steps (i.e., ADefect1 detection means/step, EFMDefect detection means/step, and interruption detection means/step).

Thus, as the cited prior art references, taken alone or in combination, fail to disclose, teach, or suggest the RPDefect detection means/step and the DSPDefect detection means/step as set forth in amended claims 1, 8, and 13, it is submitted that the present application is allowable over the cited prior art of record. Reconsideration and withdrawal of the rejections thereto, and to claims 2 – 7, 9 – 12 and 14 dependent therefrom, are requested.

Newly Presented Claims

Applicants have added Claims 15 and 16 to better distinguish the present application from the cited prior art references. Specifically, Claim 15 clarifies that the DSPDefect detection means of claim 1 “compares an absolute difference of said RF signal and a frequency-domain filtered RF signal with a DSPDefect threshold level, and sets a DSPDefect flag signal when said absolute difference is greater than said DSPDefect threshold level.” Claim 16 provides similar specificity to the DSPDefect detection means of claim 10. These amendments are supported by the originally filed specification/drawings, and therefore no new matter incurred.

Moreover, Applicants have added a new Claim 17 which includes the elements/limitations of Claims 1, 6-9, and 15.

Entry and allowance of these new claims are requested.

CONCLUSION

In light of the foregoing, Applicant submits that the application is now in condition for allowance. If the Examiner believes the application is not in condition for allowance, Applicant

respectfully requests that the Examiner contact the undersigned attorney if it is believed that such contact will expedite the prosecution of the application.

In the event this paper is not timely filed, Applicant petitions for an appropriate extension of time. Please charge any fee deficiency or credit any overpayment to Deposit Account No. 14-0112.

Respectfully submitted,
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APPENDIX